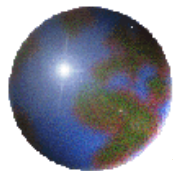


Immunization Policy

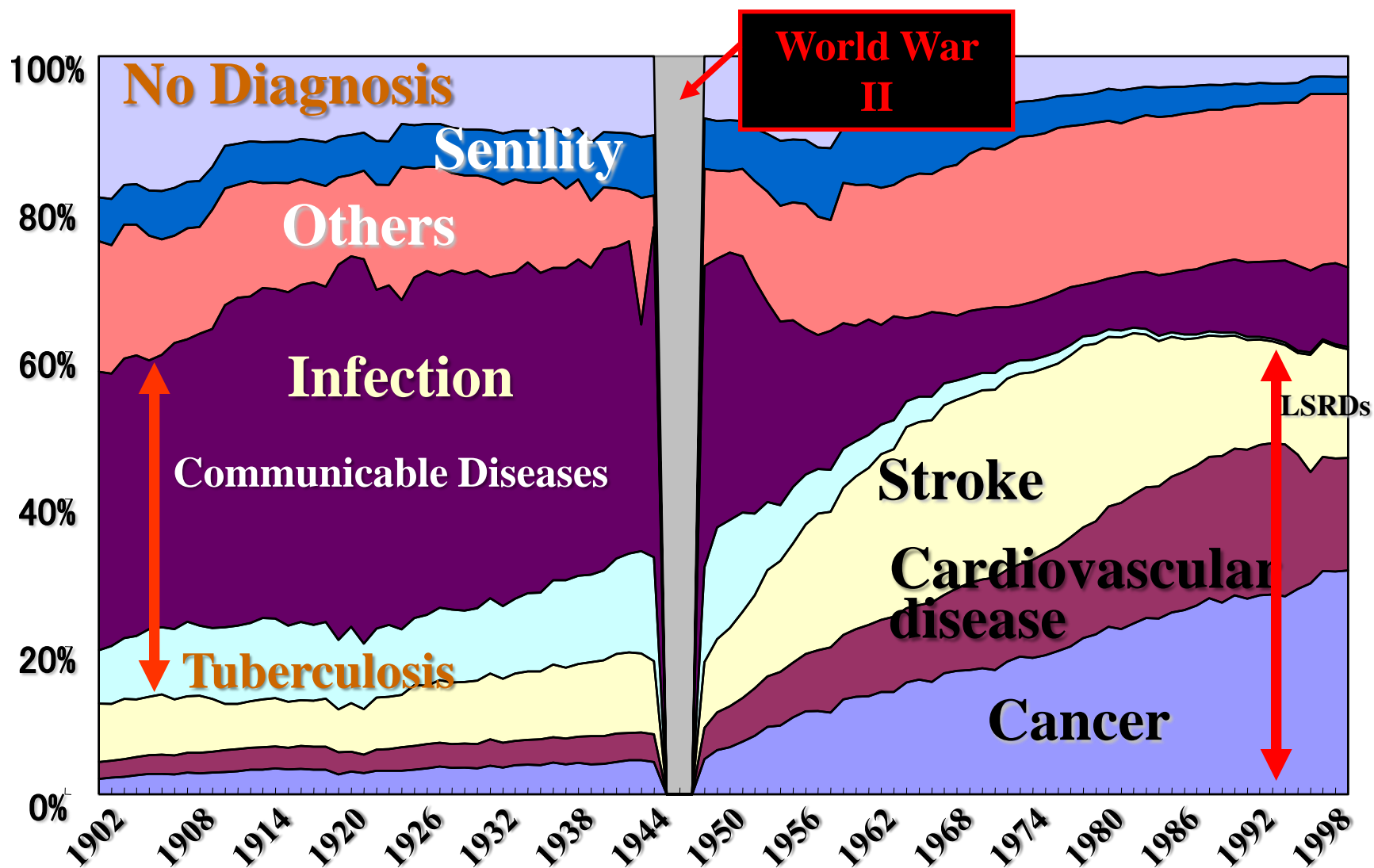
~ current situation and challenges ~

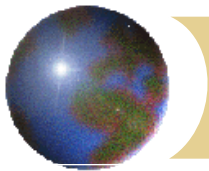
Masato Mugitan M.D., M.P.H.
Assistant Minister for Global Health
Ministry of Health, Labour and Welfare, Japan



Transition of “Causes of Deaths” in Japan

(from 1899 to 1998)

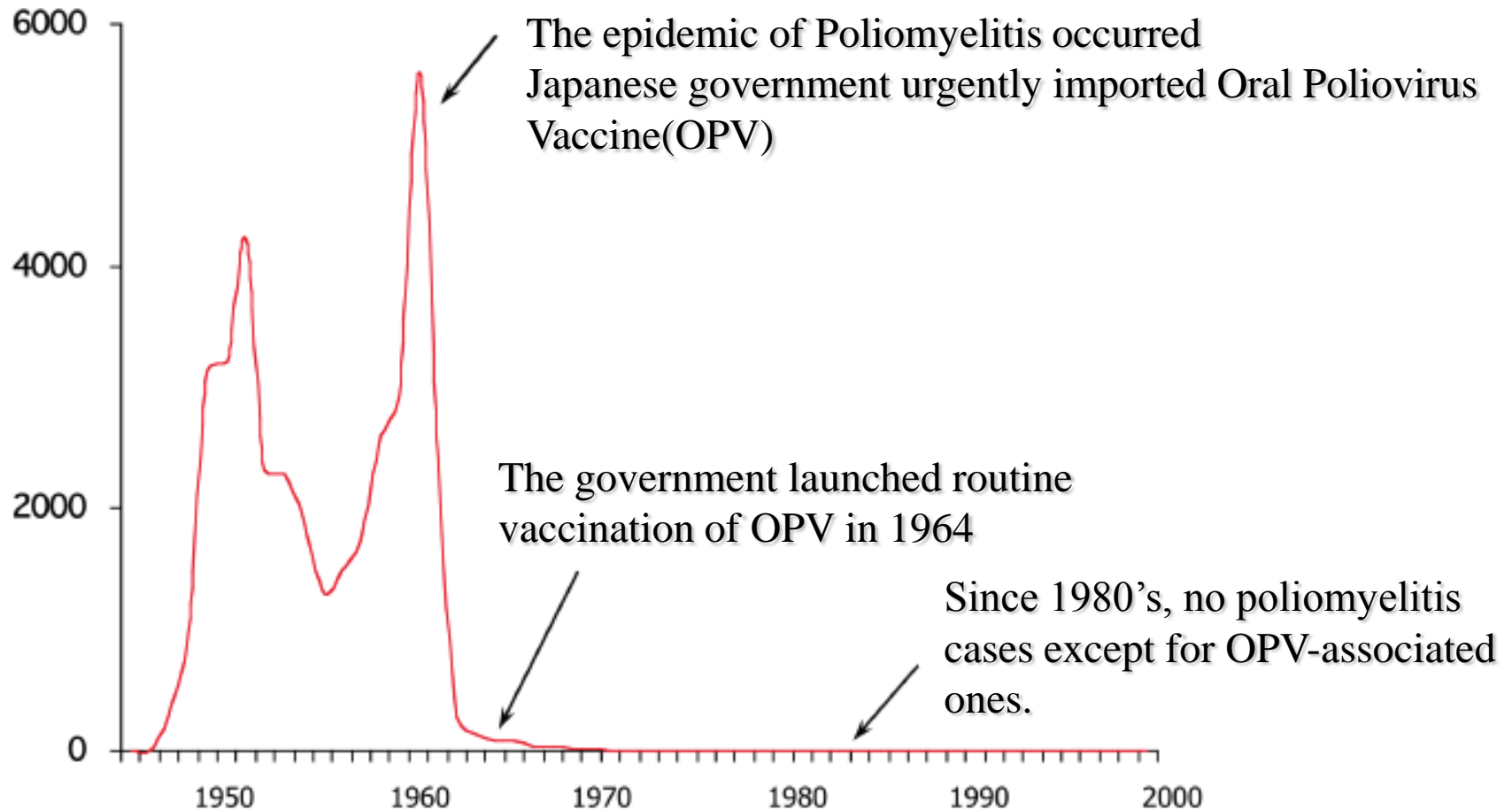




Historic Transition of vaccination scheme

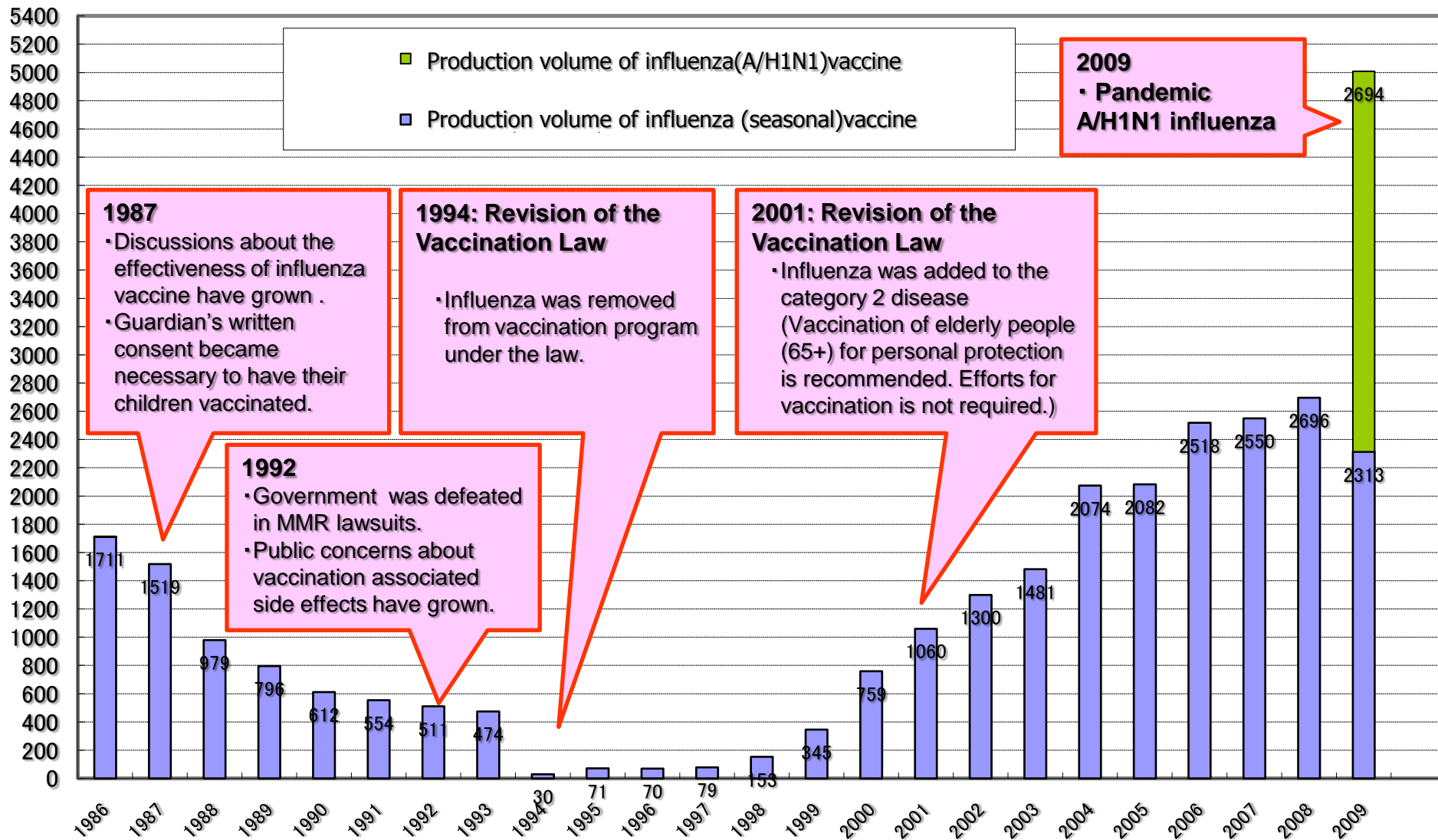
1948 enacted	<ul style="list-style-type: none">● Law enacted● Many patients and deaths by infectious diseases● <u>Social defense</u> against pandemic is badly needed	<ul style="list-style-type: none">● <u>mandatory vaccination with penalty when rejected</u>● “all citizens shall receive the vaccinations stipulated in the law”
1976 1 st rev	<ul style="list-style-type: none">● Decrease in the number of patients and deaths by infectious diseases● <u>Health damages</u> due to vaccination <u>became a social problem</u>● <u>Relief system</u> was added to the Law	<ul style="list-style-type: none">● <u>Mandatory vaccination without penalty (except pandemic vaccination)</u>
1994 2 nd rev	<ul style="list-style-type: none">● Dramatic decrease in patients/deaths by infectious diseases● informed consents in health care● Judicial rulings of health damage cases● Strengthened relief system	<ul style="list-style-type: none">● Citizens “<u>shall make efforts to receive vaccination</u>”● Influenza removed
2001 3 rd rev	<ul style="list-style-type: none">● Decline in influenza vaccination rate● Serious symptom of influenza among elderly became a social problem● Influenza re-added	<ul style="list-style-type: none">● Class 1 disease: Efforts to be vaccinated required● Class 2 disease: Efforts <u>NOT</u> required

Trend of Poliomyelitis cases in Japan (1947~)



Production trend of influenza vaccine in Japan

(10,000 Vials)

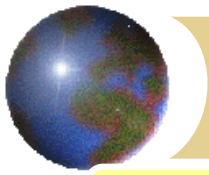


Figures in the graph are the amounts of production.

Those in brackets are unused amounts.

*The unused amounts include the number of returned vials and running stocks.

*The unused amounts before 1995 are unknown.



National Immunization Law

Purpose

- Contribute to the improvement and enhancement of public health by providing vaccinations to prevent occurrence and spread of potentially infectious diseases
- Provide prompt relief to health damages by carrying out vaccination

Outline

Target diseases :

■ Class 1 Infectious Diseases (Focus on mass immunity, mandatory)

Diphtheria, Pertussis, Acute poliomyelitis, Measles, Rubella, Japanese encephalitis, Tetanus

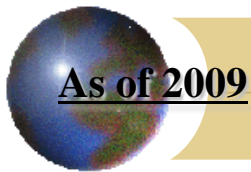
■ Class 2 Infectious Diseases (Focus on personal prevention, voluntary)

Influenza

Practicing entity : municipalities

○ Most municipalities are bearing the cost for the routine vaccination w/financial subsidies from the National Government for low income families

○ Medical expenses, medical benefit and disability pension etc. shall be paid out for any health damage incurred by legally provided vaccination



As of 2009

Target diseases

Target group of people subject to periodic vaccination:

Age/period [government ordinance]

Vaccination

[Law]

Class 1 Infectious Diseases

1st graders of junior high schools and 3rd graders of high schools are targeted in the limited period of 5 years

Diphtheria

1st period: 3 - 90 months old
2nd period: 11 - 12 years old

Pertussis

3 - 90 months old

Acute poliomyelitis(Polio)

3 - 90 months old

Measles

12 - 24 months old
Of 5-7 years old, 1 year before school enrollment

Rubella

12 - 24 months old
Of 5-7 years old, 1 year before school enrollment

Japanese encephalitis

1st : 6 - 90 months old
2nd : 9 - 13 years old

Tetanus

1st : 3 - 90 months old
2nd : 11 - 12 years old

Tuberculosis

Until 6 months old

[Government ordinance]

Smallpox

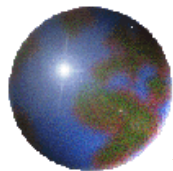
As an emergency vaccination to prevent the risk of epidemic triggered by bioterrorism etc. (not implemented at present)

Class 2 Infectious Diseases

[Law]

Influenza

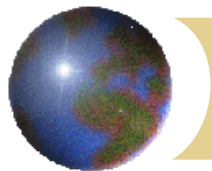
- a) Elderly of 65 year-old and above
- b) 60-64 year-old people with chronic insufficiency of cardiac/renal and respiratory functions



Recommended vaccines in routine immunization

	Japan	USA	WHO
DPT	○	○	○
MMR	MR	○	△
Polio	OPV	IPV	OPV
BCG	○	*	○
J Encephalitis	○	*	△
Influenza	○	○	△
HB	*	○	○
HA	*	○	△
Varicella	*	○	
Hib	*	○	○
Pneumococcal	*	○	○
Rota		○	△
Meningococcal		○	△
HPV	*	○	○





Vaccines currently available by MAHs

Feb. 2010

legally defined

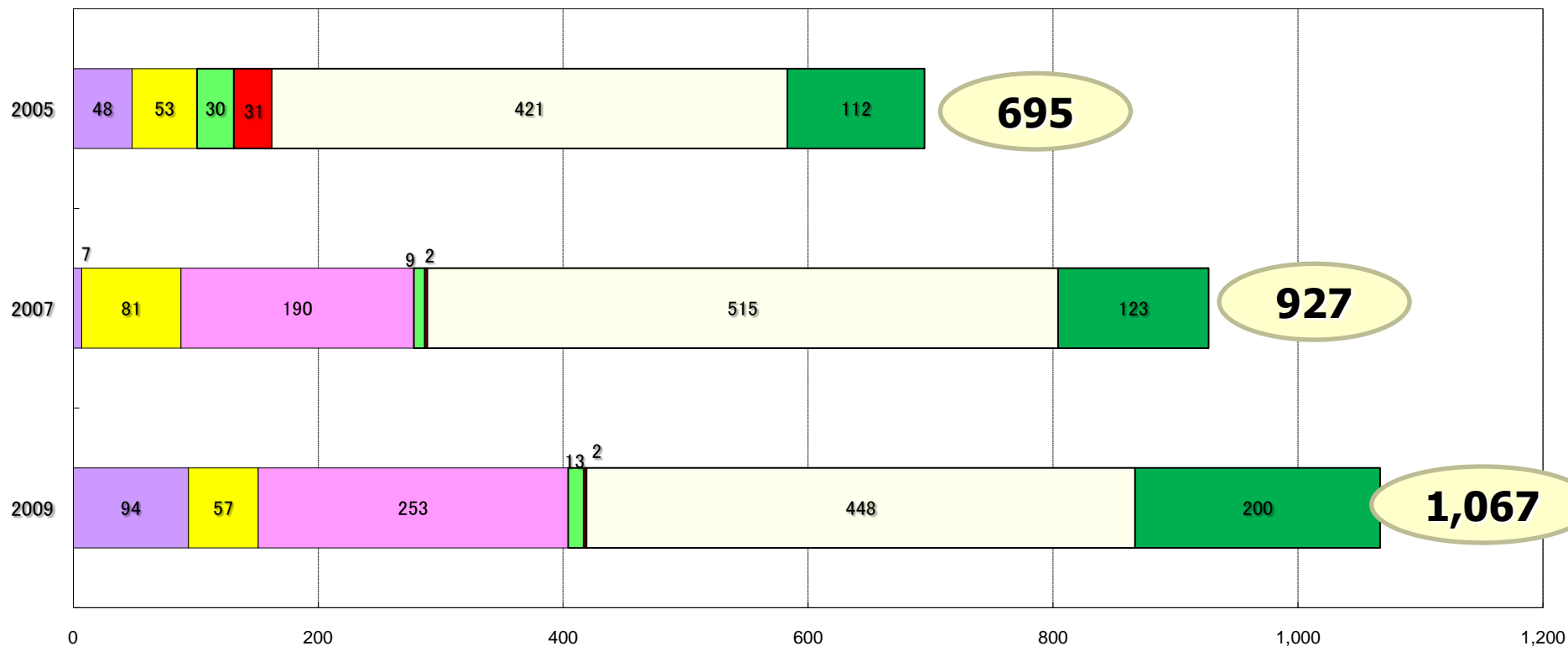
	Kitasato	Takeda	Kaketsu -ken	Biken	Denka	BCG Lab.	Polio Inst.	Banyu	Sanofi- Pasteur DS	GSK	Pfizer	Novartis
Diphtheria, Tetanus, Pertussis	●	●	●	●								
Diphtheria, Tetanus	●	●	●		●							
Diphtheria				●								
Tetanus	●	●	●	●	●							
Polio							●					
Measles, Rubella		●		●								
Measles	●	●		●								
Rubella	●	●		●								
Jpn.encephalitis				●								
BCG						●						
Influenza HA (seasonal)	●		●	●	●							
Influenza HA (A(H1N1))	●		●	●	●					■		■
Mumps	●	●										
Varicella				●								
Hepatitis B			●					■				
Hepatitis A			●									
Weil's disease(Leptospirosis)					●							
Rabies			●									
Pneumococcal 23valent								■				
Yellow fever									■			
Haemophilus b									■			
HPV										■		
Pneumococcal 7valent											■	

● ; domestically manufactured

■ ; imported



Annual Production of Vaccines



Unit: Million \$

\$ 1 = 100yen

■ Japanese Encephalitis ■ DPT ■ MR ■ Measeles ■ Rubella ■ influenza ■ Other Vaccines

Note: The data is based on production volume and does not reflect actual usage volume.
The data excludes imported vaccines.

Surveyed by the Association of Biologicals manufactures of JAPAN "Saikin Seizai Kyoukai"



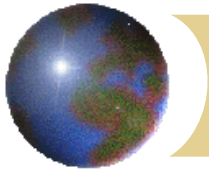
Ministry of Health, Labor & Welfare



Vaccines approved (1987~)

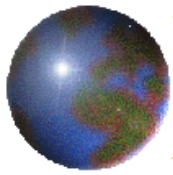
	Japan	United States
1987	Varicella	Hib, IPV
1988	MMR, Pneumococcal 23valent	
1992		DTaP, JE (from Japan)
1993		DTaP-Hib
1995	Inactivated HA	Varicella (from Japan)
1996		Hib-HB, Inactivated HA
2000		Pneumococcal conjugate
2001		HA-HB
2002		DPT-IPV-HB
2003		DPT for adult
2005	MR	MMR-Varicella, Meningococcal
2006		Rota
2007	Hib	
2008		
2009	HPV, Pneumococcal 7valent	

are



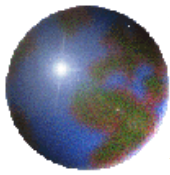
When not legally defined

- public acceptance
- out of pocket prices
- level of relief payment in case of health damages



Background Challenges

- ✚ “Invisible” benefits in preventing diseases vs. “visible” health damages
- ✚ Mandatory mass vaccination
→ voluntary individual vaccination
- ✚ Declining birthrate: shrinking market, perceived costs of health damages
- ✚ Biological vs. chemical compounds: risk of contaminants, required production capacity & period



Vaccine Industry Vision(2007.3)

- ✚ Strategic capacity of manufacturers
- ✚ Strengthening R&D
- ✚ Alliance with domestic major pharmaceutical companies
- ✚ Alliance with foreign manufacturers
- ✚ Subsidized market and other market
- ✚ Export and licensing out

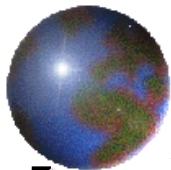




Support by MHLW

- ✚ Follow up Committee on the Vaccine Industry Vision
--- WG report (2008.4)
- ✚ Subsidies for orphan vaccines
- ✚ Subsidies for manufacturing and stockpiling of pre-pandemic vaccine
- ✚ Guideline on vaccine approval
- ✚ Forecast of future demand





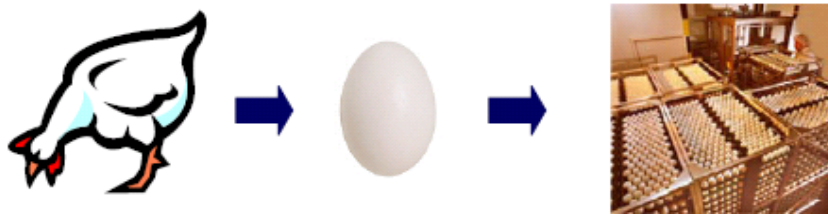
Strategy to build-up vaccine production capacity in Japan

【Objective】

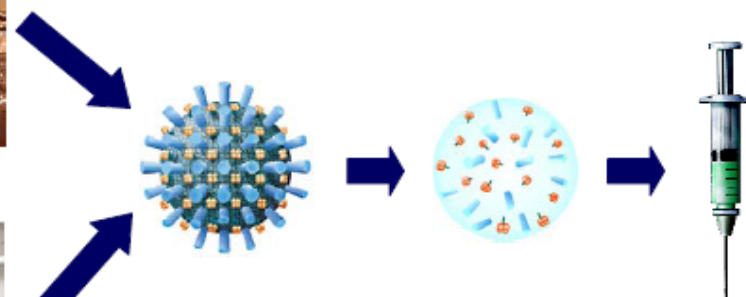
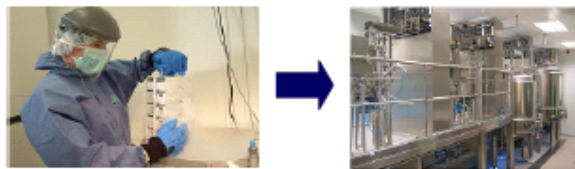
To establish the production capacity to provide vaccines for the whole nation in 6 months in case of pandemic

- To develop cell-based influenza vaccine.
- While developing cell-based vaccine, to strengthen capacity for egg-based production.
- To promote the development of “the next generation of vaccines” which are more effective and convenient.

Long lead times, open handling steps



No lead times, closed process



Ministry of Health, Labor & Welfare



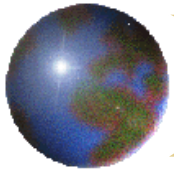
Future directions

- ✚ Catch up to Global Standard (Hib, pneumo, HPV, mumps, varicella, hepB, IPV, DTPII?)
- ✚ Convince the Nation (efficacy, necessity, safety based upon sciences): acceptable level of risk
- ✚ Secure stable supply
 - ✚ Routine immunization (quality, price)
 - ✚ Pandemic vaccines (SS<<DD)
- ✚ Clear message to the Industry (predictability, transparency)



Technical frontier

- ✚ Adjuvant (compensate production speed and volume)
- ✚ Vaccine delivery system (edible or drinkable, not injection)
- ✚ Multivalent & combined vaccines, simultaneous injection (less opportunity cost)
- ✚ Antibody $\uparrow \rightarrow$ real world protection (when, how to evaluate by whom)



Vaccine Supply in the World

✚ R&D

- Time Interval
- Easy and quick injection
- Evaluation of Adverse Effect

✚ Distribution System

- GAVI could NOT work for H1N1
- Intellectual Property
- Tiered price in combination with a loan